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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/474,359	12/29/1999	JEFF C. MORRISS	INTL-0294-US	2154

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EXAMINER

KIM, KEVIN

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 02/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/474,359

Applicant(s)

MORRIS, JEFF C.

Examiner

Kevin Y Kim

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 7-9,12-15,18-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-27 is/are allowed.
- 6) ☒ Claim(s) 7-9,12-15,18 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments with respect to claim 7 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 12 recites the limitation "the first pulse train signal" and "the second pulse train signal." There is insufficient antecedent basis for this limitation in the claim. This lack of antecedent basis stems from the dependence of this claim on a cancelled claim (previously claim 11). Thus, claim 12 is considered to include all the limitations of the canceled claim 11 for the examination purposes. Likewise, claim 18 depends on a cancelled claim (previously claim 16). And yet it fails to further limit its base claim because (although cancelled) claim 6 already defines the duty cycle of the pulse train signals indicates the degree of skew by stating that it increases with an increase in the degree of skew.

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 7-9, 13-15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al in view of Sharman et al (U.S. Patent No. 5,736,872) and Dabral (U.S. Patent No. 5,973,526).

Art Unit: 2634

Consider claims 7,13. Referring to Figs. 11 and 14, Tamura et al discloses a data receiver comprising data buffers (541 –543), “a first circuit” (5301) generating a skew-indicating signal between data and strobe and “a second circuit” (5302,5304) for latching data into the buffers. And yet Tamura et al is silent on the characteristics of the control signal indicating the skew between the data and clock signals. It simply shows a control signal from the phase comparator to the dotted box representing a delay chain circuit. In other words, the patent failed to expressly teach exactly how the output of the comparator controls the delay of the clock signal. Further, considering that all phase detectors produce an output signal proportional in magnitude or duty cycle, as established by Sharman et al at col.6, ll.25-28, and Tamura et al does not exclude either type, a phase detector producing a square wave signal whose duty cycle indicates the skew between the two inputs would have been one of two possible options. Furthermore, Debral teaches using the duty-cycle modulated signal to control variable delay circuit. See col.4, ll. 48-55 and Fig.5. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use a phase comparator that produces a pulse train whose duty cycle indicates the skew of two inputs, as taught by Dabral, as an actual implementation of the phase comparator of Tamura et al because such a phase comparator is one of two well known phase comparators as evidenced by Sharman.

Regarding claim 8 calling for registers, see UP-Down Counter connected to the phase comparator in Fig. 52.

Regarding claim 9 reciting a delay chain and multiplexing circuitry, see the delay chains (5302, 5304) and col.19, ll.16-20.

Art Unit: 2634

Regarding claims 14 and 15 the use of an up/down counter that stores "a calibration value" indicative of phase difference between two signals to a phase comparator for delaying the strobe signal is shown in Fig. 52.

Regarding claim 19, data in the latches are known to represent "a predetermined data pattern."

***Allowable Subject Matter***

6. Claim 12, as interpreted in paragraph 3 above, would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

7. Claims 20-27 are allowed.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Doblar et al (U.S. Patent No. 6,338,144) discloses a phase comparator producing a square wave signal with varying duty cycle in response to the difference between two input clock signals. Col.7, ll. 45-50.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 703-305-4082. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the

Application/Control Number: 09/474,359

Page 5

Art Unit: 2634

organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

kvk

January 28, 2003



**STEPHEN CHIN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**